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ABSTRACT

This essay derives from roundtable discussions of teams from seven research universities involved in a Knight Collaborative Engagement on Academic Indicators and Information Systems to Guide Resource Decisions. While colleges and universities are built on the premise that good data, well tested by an often adversarial process of discovery and verification, can yield fundamental truths about how things work and how they ought to, most institutions have yet to learn how to use data strategically. The practice uses data for narrow and parochial causes, often to protect the existing order; seldom is data used as the instrument of strategy, that is, to gauge the capacity of an institution to fulfill current commitments or pursue new opportunities, to understand external markets and the competition for new or existing programs and services, to analyze the opportunities for new ventures through collaboration among departments and centers, or to explore the prospect of even broader collaboration with other colleges and universities. The essay suggests use of a matrix of domains and capacities to support strategic decision making and development of a national data base centered on collective performance to demonstrate responsibility for service to the public. (RH)

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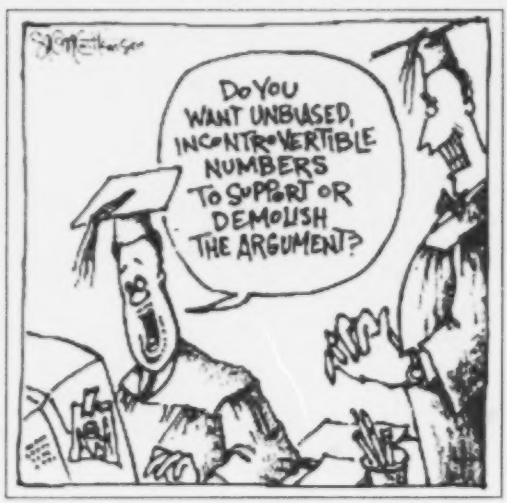

The Data Made Me Do It

It is a story often told. The chair convenes the committee, turns to his colleague who has developed a proposal, and asks for a succinct summary of the issue. Next comes a discussion of the proposal's pros and cons, the costs associated with acting now or letting time fix the problem. Just as the discussion gathers momentum, there comes from the end of the table the gentle but authoritative "Ahem," and the ever-so-polite query: "Tell me, George, have we got any data to support that argument?"

It is a time-tested stratagem, this move to dismiss—not by openly opposing an idea but by insisting that nothing be ventured until sufficient data are at hand to evaluate every consequence, both intended and unintended, until the solution can be ascertained as the very best, not just for the moment, but for all time. What the chair, every committee member, and especially the proposer know is that this idea is going nowhere—not now, not this month, probably not this year.

The irony is that colleges and universities are just as likely to make a decision on the basis of little or no data. It is not unusual for a proposal that offers breath-taking opportunity to come before the leadership group: perhaps a major donor has appeared on the horizon, offering start-up funding to build a facility, develop a new graduate program, or expand the institution's presence in the distance-learning market. The advantages to proceeding appear self-evident at worst, overwhelming at best. The discussion is minimal, upbeat, and to the point: the proposal is approved, the decision made, the major venture begun with scarcely a thought about the market for the new initiative, the long-term impact in terms of human or financial resources, or the effect on institutional focus and the quality of existing programs.

These stories convey much about the irony and ambivalence that swirl around the uses of data in an academic setting. Colleges and universities, as scholarly communities, are built on the premise that numbers matter, that good data—those that are well tested by an often adversarial process of discovery and verification—can yield fundamental truths about how things work and, by extension, how things ought to be. But if the appetite for information is insatiable, most institutions have yet to learn how to use data strategically. The pervasive practice is all too often to enlist data in narrow and parochial causes—to fight turf battles, impede change, secure the dominance of ideas or personalities within a domain, or justify past and current actions at the unit or institutional level. It is a disposition concerned mainly with protecting the existing order by identifying and averting potential problems.

All too seldom do institutions make data the instruments of strategy in the fullest sense—to gauge the capacity of an institution to fulfill current commitments or pursue new opportunities, to understand external markets and the competition for new or existing programs and services, to analyze the opportunities for new ventures through collaboration among departments and centers, or to explore the

prospect of even broader collaboration with other colleges and universities. While higher education exhibits a preoccupation with numbers like never before, institutions find themselves oddly stretched to both extremes of a spectrum expressed by these two apocryphal tales. On the one hand, "We deferred any decision for want of sufficient data." And on the other, "We made the decision, data be damned." The ironic result is an institution that uses data extraordinarily well when rendering scholarly judgment but too often fails to use data effectively to improve its own operations, processes, and prospects.

Still lacking is the ability to draw data effectively into a process of responsible judgment and decision making within an institution—to make thoughtful use of data as a gauge of capacity and prospects.

This *Policy Perspectives* fundamentally asks: What would have to change to make the use of data in the management of colleges and universities more strategic and less defensive? How might colleges and universities foster a culture of data that supports the business of making decisions in an academic enterprise? What opportunities exist for using data in ways that benefit higher education institutions collectively as well as individually? Our answers grow out of a roundtable composed principally of teams from seven research universities that had worked together in a Knight Collaborative Engagement on Academic Indicators and Information Systems to Guide Resource Decisions. What we came to understand is that most major research universities have gotten substantially better at assembling good transactional data for monitoring basic operations. Still lacking is the ability to draw data effectively into a process of responsible judgment and decision making within an institution—to make thoughtful use of data as a gauge of capacity and prospects both within the institution and among higher education institutions as a whole.

Deciphering

We begin with a simple observation. Colleges and universities today are awash with data—reports, online databases, data warehouses, sophisticated posting and inquiry systems—all attesting to higher education's embrace of information technology. And still the problem, as most faculty and nearly all administrators have come to understand, is that data too seldom come to engage with larger conceptions of the institution's direction—its capacity, its challenges and opportunities, and its decision-making process. Universities and colleges often expend energy collecting data for narrow and even myopic purposes. Many of the data compiled in such instances are incomplete, erroneous, based on questionable assumptions—more a hindrance than a help to institutional strategy.

Colleges and universities assemble data for a variety of purposes. There are public relations data, honed and displayed in contexts carefully designed to present an institution in its most flattering light. There are accountability data, assembled at the mandate of a governing board or legislature eager to measure the value an institution contributes to the lives of its graduates and to society. And then there are the data an institution generates in the process of monitoring its own operations.

Those who collect such data are ordinarily their owners—the department or unit that defines the data elements, monitors their collection and storage, and decides to whom and for what purposes the data are made available. The result is a collected database whose elements are guarded, isolated, and frequently inconsistent. Data definitions become turf definitions, and building crosswalks between one data source and another remains an uncertain endeavor. Who's asking becomes as important as who's answering. Data that the government relations people prepare in response to questions posed by a state legislature might well differ from internal management numbers. Even a seemingly straightforward question, such as how many full-time faculty the institution employs, can yield embarrassingly different answers.

Data definitions become turf definitions, and building crosswalks between one data source and another remains an uncertain endeavor.

Data assembled around such differing centers of gravity seldom enhance an institution's ability to make informed judgments about its direction and

priorities. Given the dispersion of authority and responsibility, it is not surprising that data in transit from one administrative domain to another can give rise to different understandings. Once detached from the framework of questions that gave rise to their existence, data easily become forces of dissolution—the sound and the fury, signifying everything and nothing.

Then there are the data not collected—the lacunae in the spectrum of information that would yield a better understanding, for example, of what students learn, how faculty spend their time, whether the institution's investment in such things as graduate education or intercollegiate athletics bestows financial or other benefits on the institution as a whole. These are blind spots in the vision of the future, the questions left unasked about an institution's capacity to pursue newly defined needs or opportunities. In academic settings data are not collected for two reasons: "We really don't want to know because it will make us change our minds," or "We don't want someone else to know for fear the result would further erode the academy's independence and autonomy." Most faculty members do not want to be measured, believing that scholarly endeavor is not capable of a quantitative rendering. They don't want their departments compared with others either within or outside their institutions, fearing that faulty judgment will lead to fewer resources. Most presidents and their provosts are inherently suspicious of external calibrations, having learned long ago that purported measures of efficiency and productivity too often result in formula allocations that limit their institution's prospects. In both cases, the best defense is not to collect data that, in the hands of others, must inevitably lead to invidious comparison.

Most data generated by a college or university attest to where the institution has been. What is too often missing is a data-driven framework that would allow the institution to ask: "Where are we likely to be tomorrow or next year or ten years from now?" Very few institutions, for example, can say with much certainty how much of their student market is placed at risk by the presence of new, often for-profit providers of postsecondary education. Even if it has not encountered significant competition from alternative providers, an institution must periodically ask key questions about its market and its competition: "How big is that market? Who else serves it now? What is our market share, and how could that change in the future? How big of a margin do those other providers realize?" Knowing the answers to these questions is a critical step in determining the prospects for success in a new market as well as the likelihood of sustained competitiveness in an old one.

In many colleges and universities the inability to use data strategically stems from a failure to understand how much their continued vitality depends on their bottom lines. All too often, higher education institutions seem willing to accept on faith that a decision is the right one, simply because it is consistent with their mission and has been reached through collegial discussion. Many institutions today are facing financial crises stemming from earlier decisions made with little or no consultation of strategic data. The financial losses incurred from the clinical activities or hospitals of some universities with medical operations demonstrate the consequences of judgments made with too little consideration of markets and economic impact. As other institutions extend their product lines into activities like distance learning, applied research, noncredit certification, and industry training, the ability to keep track of both traditional and non-traditional activities will become even more important to institutional leaders.

Many institutions have a fundamental aversion to the language and conceptual framework of business enterprise, and they are loath to organize their data systems in terms of customers, markets, product lines, or activity-based costing.

Like any business, higher education institutions need to know how much time and effort are going into the development of these new activities, how much cross-subsidy is taking place, and the extent to which new initiatives strain the basic capacity and efficiency of different units. But many institutions have a fundamental aversion to the language and conceptual framework of business enterprise, and they are loath to organize their data systems in terms of customers, markets, product lines, return on investment, depreciation of products and knowledge, or activity-based costing.

Operational Data

If strategy entails the ability to foresee and respond to new opportunity, part of that skill derives from a basic reading of vital signs in one's own organization. The good news is that colleges and universities have gotten better at developing and using operational data, largely because they have had no other choice. The cost of making mistakes has become more telling as the public increasingly holds higher education to the same performance standards applied to other industries providing services for a fee. Institutional managers can no longer afford to be vague about budgetary expenditures, numbers of full- and part-time students, numbers of personnel, or the numbers on student applications, admissions, and matriculations. Almost everywhere institutional research functions have been beefed up. The data systems monitoring operations are now responsive to most administrative demands for timely and accurate information, giving, as one administrator put it, "ready access to what is there."

Academic managers have also become more adept at reading and interpreting operational data, learning to recognize the tell-tales of impending problems: slow processing times during registration; decreased inquiries as a harbinger of an enrollment shortfall; an increase in the number of students who have deferred degree requirements. Good academic managers have also learned to trust systems and subordinates, relying on them to gather the necessary indicators rather than insisting on getting all the raw data "first-hand."

Nothing can be less productive than having alarms sounded in the media and other public venues on the basis of numbers intended as early-warning beacons for institutional leaders.

What most skilled academic officers want first are unambiguous indicators—warning lights on what many have come to conceive as a leadership dashboard. Some of these fall under the heading of academic and scholarly capacity: such things as unplanned change in student enrollment or retention; increased difficulty in recruiting or retaining faculty; a downward shift in the number of research proposals submitted to external funders; decreased competitive scholarly performance; loss of community-based "preferred partner" relationships. Other indicators are financial: shortfalls in reaching fundraising targets; a decrease in generated research funding; increased incidence of departments over-spending their budgets. A third set of warning beacons might be termed external: changes in state activity resulting from shifts in public opinion or political action; changes in media coverage; or a change in the placement rate of graduates from undergraduate or graduate programs.

Most of the time the information necessary for an early-warning system is readily available, and leaders with access to such information are expected to act—to know what the problem is and how the institution ought to respond. Institutions in this early-warning frame of mind can be expected to develop a culture of watchful competitiveness among units—a sensitivity both to general danger and to particular weakness that might be turned to another unit's advantage. Given this awareness, most provosts and deans quickly learn not to sound public alarms too early or appear to be disaster mongers. The question most seasoned academic leaders have to answer sooner or later is: How big is the back seat? How public should the warning signs be? Who should have direct access to the information the indicators provide?

On one side is the academic tradition of open access and data transparency. In a culture of shared governance, it is hard to deny faculty access to the same indicators the administration uses to identify potential problems. The other side is populated by realists who recognize that in complex institutions and competitive cultures such indicators can become instruments of attack as well as warning. Few indeed are the academic administrators who have not made summary data available to a key committee or the faculty as a whole, only to find the indicators, regardless of the stated purpose of their release, suddenly marshaled in a broad, often mean-spirited attack on the administration itself. What gets lost in these moments of combat are the underlying assumptions that give the indicators meaning as well as the caveats that inevitably accompany the release of technical data.

Beyond the impact that a warning sign may have among an institution's departments and units is the effect of such information on external constituencies. Nothing can be less productive than having alarms sounded in the media and other public venues on the

basis of numbers intended as early-warning beacons for institutional leaders. The leader's challenge is to create a space for discussing warning data in a productive way, without creating an "I-win-you-lose" environment among the parties involved. In practical terms, this means that leaders must reserve control of early-warning data.

Indicators are predictors of likely performance if no corrective action is taken—provided, of course, the indicators are well defined. Ordinarily, a warning indicator is a signal for a quiet review of the potential problem with the leadership of a given unit rather than a cause for public alarm, much less for emergency measures. In those times when the early-warning data do precede an unfavorable change in circumstance, the question is how to convey this information responsibly to both internal and external communities. What data should become public, when? Who makes them public? An academic leader should have sufficient control over key performance data to be able to determine the answers to such questions along with the parties directly involved, rather than being co-opted by an information network that keeps nothing under wraps. In higher education, as in other strategic operations, not everyone can know everything all the time.

In Search of a Culture of Data

The fact that the release of data so often accelerates and even exaggerates political conflict suggests that most institutions lack a genuine culture of data. At most institutions, comparatively few members of the campus community have the skills or perhaps just the patience to interpret the management data presented to them. Those academic leaders who succeed in making their campuses data smart often do so by providing cues to responsible interpretation before presenting data for public review and comment. Having taken the precaution of presenting data in a way that fosters understanding without sowing confusion, what is also required is a sense of the story the data tell—the narrative that provides context as well as meaning. It is a story that links the past to the present while sounding themes for the future as well. Often this step consists simply of recounting the institutional purpose and goals that have given rise to the data presented. In saying out loud why the data were assembled, how they fit into the sustaining goals of the institution, and what they say about the progress in reaching those goals, the knowledgeable academic leader—president, provost, dean, department, committee or task force chair—draws on his or her own sense of the data as well as past efforts to establish shared expectations among colleagues as to how data should be understood.

Just as persistent is the problem of building consistent crosswalks between separate databases. Even when institutions understand the problem, they find it difficult to muster the political will to resolve or override the territorial disputes over who owns which data. When installing new computer systems, the impulse is still too often to customize so that the new reports and processes "look like" the old ones, signifying that the institution remains sensitive to those local customs, traditions, and definitions that in the past have governed the collection and use of data.

Those academic leaders who succeed in making their campuses data smart often do so by providing cues to responsible interpretation before presenting data for public review and comment.

Not surprisingly, then, better transactional data have not yielded less costly institutions. Today, universities and colleges expend more time, effort, and money than ever before in gathering data. Investments in technology have made it possible for institutions to reduce the amount of time spent assembling numbers on basic transactions. For all that, higher education institutions still have not learned to organize and use data effectively for internal decisions or public accountability.

A Matter of Strategy

In the end, however, it is not efficiency per se but effective strategies that matter in enterprises that are expected to be both mission centered and market smart. While transactional data can be expected to supply the basic building blocks of an information system designed to aid strategic decisions, what the academic community requires most of the time is a clear sense of the direction the institution is heading. Here the problem, ironically, is the inability of most colleges and universities to look over the horizon, several

years out, and imagine the opportunities for new and different roles they might play in fulfillment of their missions. Strategically defined data ought to help institutions think outside the box of their current circumstances. What those responsible for steering a strategic course—chairs, deans, provosts, and presidents—require, simply put, are indicators that help them anticipate opportunities as well as problems.

The strategic issues that concern most academic leaders fall under comparatively few management domains:

1. *Units:* the financial and academic well-being of individual schools, departments, institutes, and programs.
2. *Research/Product Lines:* the vitality and performance of the research enterprise and of other programs, services, or products in which the institution has invested.
3. *Markets:* what new competition has entered existing markets for students or sponsored research, and what new market opportunities have appeared.
4. *Learning:* the performance of academic programs; what graduates learn, and how they use what they have learned.
5. *Talent:* the richness of the pool from which the institution draws its current and future faculty, and the institution's capacity to support faculty development.

The kinds of capacity questions an academic leader would want answered about these five domains are also comparatively few:

A. *Economics:* the extent to which work in this domain is well defined, services are delivered efficiently, costs are contained, return on investment is realized, etc.

B. *Competitive Capacity:* the degree to which the institution's strength in this domain helps it compete with others in its market.

C. *Collaborative Capacity:* the extent to which the different units within this domain work together to leverage their strengths.

D. *Deployment:* the extent to which human and financial resources are aligned within this domain to fulfill both unit and institutional goals.

E. *Mission Centeredness:* the extent to which successful performance within this domain fulfills the institution's particular mission and adds value through its contribution to the public well-being.

This arrangement of domains and capacities yields a matrix that can be used to support the making of strategic decisions. Casting the numbered domains in rows and lettered capacities in columns produces the following conceptual scheme:

	Economics	**Competitive Capacity**	**Collaborative Capacity**	**Deployment**	**Mission Centeredness**
Units					
Research/Product Lines					
Markets					
Learning					
Talent					

Viewed broadly, it is a matrix for charting a strategic course. Taken literally, the matrix provides a simple gauge of the availability and quality of data to support decision making. Each cell of the matrix invites the provost, dean, or department chair to ask: "How extensive—and how reliable—are the data available to gauge the subject that a given cell defines?" How solid and broad is the base of information to determine, for example, the collaborative capacity of a set of departments, the mission centeredness or competitive capacity of an institution's learning programs?

Ultimately the more important element of the matrix derives from its potential first to identify and then to sharpen an institution's understanding of the opportunities and challenges it faces. Aligning domains and capacities in this way can yield a more precise sense of the conversations in which a leader might want to engage concerning the state of the institution—past, present, and future. As heuristic, this exercise can generate insights leading to a broader understanding of data as part of a continuing narrative of institutional progress toward longer-range goals. "The matrix," as one administrator has observed, "serves me primarily as a generator of questions. It helps to frame the conversations I would like to foster within the institution as we consider our strategic options. It helps me to identify the pieces of our institutional story that I need to know more about." In short, it is a conceptual tool that can link data more closely to a shared frame of meaning.

Colleges and universities have defied every attempt to develop industry-wide standards, in part because each institution wants its own definitions, its own measures of quality and performance, and hence its own data systems to prevail.

Gauging Collective Performance

One of the things that distinguishes higher education from virtually every other industry is its passion for customization. Colleges and universities have defied every attempt to develop industry-wide standards, in part because each institution wants its own definitions, its own measures of quality and performance, and hence its own data systems to prevail.

One result of this independent-mindedness is that higher education as a whole cannot answer the basic questions that have come to occupy national attention. Because institutions gather data primarily in the service of their own particular needs, the industry as a whole can say very little in response to questions about its overall success and capacity. There are no data that track such things as student persistence or completion from a system-wide perspective—no protocols to account for the growing phenomenon of students who stop in and out of higher education, enrolling intermittently in different programs at different institutions, in pursuit of knowledge and skills for purposes that may change at different times of their lives. The industry as a whole has difficulty bringing evidence to bear on questions about the success of its learning programs or the value that a college education contributes to the lives of its students; and it cannot say with certainty how well it is meeting public expectation in terms of access, participation, or affordability.

What is required is a database that charts the performance of the system as a whole in meeting the nation's expectations for higher education. While the need for such information is now broadly affirmed, the means and the details still await resolution. What troubles most institutional leaders is the notion of an imposed data collection mechanism—something linked to the Institutional Postsecondary Education Data System (IPEDS) or another federal initiative—that would measure the overall capacity of the system by summing up the capacities of each and every institution.

We think these institutional leaders are right to worry. Most proposals for such a collection instrument have turned out to be expensive as well as intrusive, leading ultimately to the kind of scorekeeping in which the winners are few and the losers many.

The answer instead is to separate the questions of institutional performance from measures of system capacity. The former is a matter of providing good consumer information—something the market is already insisting upon. Our bet is that much sooner than most institutions imagine there will be a variety of competing ratings, each providing what might best be called a consumer report for higher education.

The question of system capacity, however, will not be answered by the market. What is required here

is a broadly defined, regularly maintained national database that focuses on students/graduates rather than institutions, and that measures the key public policy issues of access, performance, and results. Who is and is not being shut out of higher education?

Higher education ought to take upon itself the funding and maintaining of a mechanism for collecting paneled data on how well the system is serving the education needs of the nation as a whole.

Who starts but does not finish, and why? What is being learned, and for what purpose? How well are graduates being prepared for the world of work? Are they simultaneously learning the responsibilities of citizenship? Are they acquiring the habits of mind that promote lifelong learning?

Ironically, data for answering these questions have been sporadically available from the federal government. In 1980, the National Center for Education Statistics (NCES) began tracking a representative sample of high school sophomores for *High School and Beyond*, interviewing them as seniors in 1982 and every two and then four years through 1992. Alas, that sample was then abandoned in favor of a second sample that began tracking a set of eighth graders starting in 1988 for the *National Longitudinal Survey (NLS)*. Now it is unclear whether this sample will continue to be tracked, as the interests of NCES continue to shift in response to changing political circumstances.

High School and Beyond and *NLS* demonstrate that it is possible to use data derived from this tracking of a cohort of individuals to produce a valid snapshot of how well the nation's system of higher education is serving its student-customers. The samples were large enough to allow researchers to focus on different market segments—for example, community colleges, liberal arts colleges, research universities, or even for-profit institutions that primarily serve adult populations. The cost of these efforts was substantial, but not outrageous. Had they been continued and then added to with the forming of additional cohort panels (probably every five years), the result could have been a sustained capacity to ask the key questions the public and their elected officials have increasingly asked of the nation's investments in higher education.

Here we have a simple proposal to make. Rather than depending on the largesse and whims of the federal government, higher education ought to take upon itself the funding and maintaining of a mechanism for collecting paneled data on how well the system is serving the education needs of the nation as a whole. A simple back-of-the-envelope calculation suggests that if all accredited institutions were to pony up an average of $500 per institution per year, sufficient funds would be available. A truly independent agency would have to be created to ensure the reliability and consistency of the data instruments and the integrity of the data. As with *High School and Beyond*, some of the cohorts would have to be identified while still in high school. The data themselves would have to be made broadly available to the research community; local, state, and federal agencies charged with overseeing the nation's investments in higher education; the media; and indeed anyone with an interest in the subject, including the colleges and universities themselves.

This effort would provide a set of indicators shedding light on the success of postsecondary learning and the value that a completed degree or coursework in higher education adds to the life of students. Such a database would also make possible some degree of experimentation with samples of students to help understand more clearly the impact of different variables on educational attainment and subsequent achievement. What would be the effect, for example, of providing a slightly greater amount of student financial aid to a given subset of students than they might ordinarily expect to receive? Would this additional aid translate into more effective learning outcomes for students in terms of educational achievement and later experience? A national longitudinal database tracking cohorts of students could show more clearly how different kinds of financial aid awards affect learning and achievement, in higher education and beyond. The findings from such experiments would help both policy officials and individual institutions to develop more targeted strategies for the allocation of financial aid to yield greater educational achievement and success in life. Other experiments, concerned more with pedagogy and learning than with how students pay for and benefit from higher education, would also be possible.

Some might contend that a more useful way of measuring the performance of higher education is to assemble data in terms of institutional type. The natural

tendency of universities and colleges is to calibrate their own performance in the context of either peer institutions or of "aspirational" institutions that offer an image of what they themselves would like to become.

The trouble with such benchmarking is that it too often reinforces the habit of understanding higher education's performance only in terms of particular segments rather than from the standpoint of the enterprise as a whole. For any given institution, confining attention to a particular peer or aspiration group has the effect of narrowing the field of vision and divesting oneself of responsibility for higher education's performance in the broader context of issues important to the enterprise's external stakeholders. Indeed, it is often the preoccupation with peer and aspiration groups that drives the growth of costs in institutions, as each scrambles to make sure it keeps pace with the others in salary and other measures. Higher education institutions of all kinds need to look beyond their own back yards to understand the larger domain of goals and issues confronting the industry as a whole.

The national database we envision would not be for the purpose of comparing individual institutions. Its focus would be on students and the impact that their enrollment in higher education has on their learning and later experiences.

To repeat, the national database we envision would not be for the purpose of comparing individual institutions. Its focus would be on students and the impact that their enrollment in higher education has on their learning and later experiences.

What would any individual institution hope to gain from this yearly expenditure of funds? First of all, a national project to report on the industry's performance would send a strong signal to policymakers and other external stakeholders that higher education intends to be responsive to their concerns. If higher education can demonstrate the ways in which, as an industry, it is doing a good job, every institution will reap the benefit of increased public confidence.

Second, a project of this sort would help to strengthen the consciousness among all institutions of the broader public purposes their individual missions help to fulfill. The ultimate benefit might well be a greater willingness to work together, both within and across different types of higher education institutions, to build strategies that yield improvement in measures such as access, affordability, persistence, and effective learning.

Finally, though the database would not yield institutional comparisons, it would produce benchmarks against which an institution could measure its own learning capacities. Without fear of invidious comparison, a college or university could administer parallel instruments to samples of its own graduates, confident that the interpretation of those results would take place within an appropriately comparative framework.

An accounting of this sort captures only a part of the contribution that higher education institutions make to society. A more complete description of higher education's capacity and its effectiveness in fulfilling the public good would also include its programs of research, outreach, and other services. We believe, however, that a database focusing on how well students are being served by the nation's higher education institutions would be a promising start; as such, it is a collective effort in accountability that warrants the participation of every university and college in the nation.

Making Data Do It

Today's higher education leaders are beneficiaries of the fact that the industry has come to have better control and understanding of the basic transactional data that track its operational procedures. Virtually every institution has sharpened its attentiveness to these measures, largely in response to increased scrutiny and demands for accountability from without. Those responsible for the academic management of institutions are also finding that their strategic dashboards have increased in scope as well as in quality and reliability. Yet higher education continues to lack a culture of data in the fullest sense, in part because it has yet to resolve the ambivalence about what data should tell and how they should be used in institutional decision making.

Building a culture of data will require that all institutions become more willing to adopt shared conventions in data collection and analysis, even if that means initiating practices that differ from the past. It

will require that members of academic communities distinguish more clearly between the repeated gathering and testing of data which underlie scientific discovery, on the one hand, and the use of data for making institutional decisions on the other. Some lessons from our own experience would suggest the following as principles worth the consideration of every academic institution.

Make data the instruments of prospective strategy, not weapons of turf defense and opposition. The very principles that define data of the latter sort often constitute non-answers to the central strategic questions facing an institution, its schools and departments. Every institution could benefit from spending less time gathering data for proprietary purposes, and more time identifying and analyzing data that genuinely speak to questions of institutional strategy. Now is the time for campus communities to reach beyond the mindset that allows any call for "more data and analysis" to cripple an institution's ability to make and act on strategic decisions. At the same time, institutions must guard against making impulsive commitments of resources to a project without ever considering key indicators of its advisability.

Ultimately, an academic community that learns to use data responsibly must move beyond a conception of strategy as the aversion of threats and danger to an understanding of strategy as the anticipation of change and the building of institutional capacity to pursue new opportunity.

Academic leaders ought to be those who demonstrate by example what it means to make effective use of data. Presidents, provosts, deans, department chairs, and senate chairs are in a natural position to show what it means to make judicious use of information in pursuit of a well-conceived strategic course. They can convey to an academic community a responsible sense of what data do and do not tell; they can show when to draw upon quantitative measures, and when to move beyond these indicators to make decisions on the basis of more intuitive responses to a range of information. A leader who holds all decisions hostage to continual demands for more data will very likely feed a culture of defensiveness in an institution, causing every unit to amass data like so many ramparts against an incursion. Making responsible use of data means knowing when it is time to act, even though it might be possible to attain more information. It means not sounding all alarms on the basis of a single early warning from a dashboard indicator. On the other hand, it means not waiting until seawater is rushing into the captain's cabin before ordering all hands on deck.

Academic leaders should act on the recognition that data take on meaning only as they become parts of a continuing story of an institution's goals and its progress in reaching them. Just as no cartographer would produce a map that did not include coordinates or a key to identifying its conventions of representation, any academic leader who presents data to an institutional community should take steps to ensure that those data can be clearly understood in the context of a continuing narrative of institutional transformation. By a variety of means—including the simple strategy matrix we have presented—academic leaders can help their communities understand data as a way of telling and extending an institution's "story" from the past through the present to its future. Ultimately, an academic community that learns to use data responsibly must move beyond a conception of strategy as the aversion of threats and danger to an understanding of strategy as the anticipation of change and the building of institutional capacity to pursue new opportunity.

Finally, higher education institutions, both individually and collectively, need to work more deliberately to develop a national database in service to their external constituencies. The concept of customer service has come to bloom more slowly in higher education than in other industries. While most individual colleges and universities have developed data systems that monitor their performance in meeting the needs of their own student-customers, the industry as a whole continues to lack a means of reporting its collective performance in fulfilling the nation's expectations for higher education. By taking the lead in building a national database centered on its own collective performance, colleges and universities would take a giant step toward viewing service to the public as truly central to their missions—and would thereby demonstrate higher education's collective commitment to take responsibility for its own actions.

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The Academic Indicators project culminated in July 1999 with a roundtable including members of all seven institutional teams in addition to experts who bring a variety of national perspectives to these issues. The following individuals participated in the Academic Indicators Roundtable and helped to shape the resulting essay:

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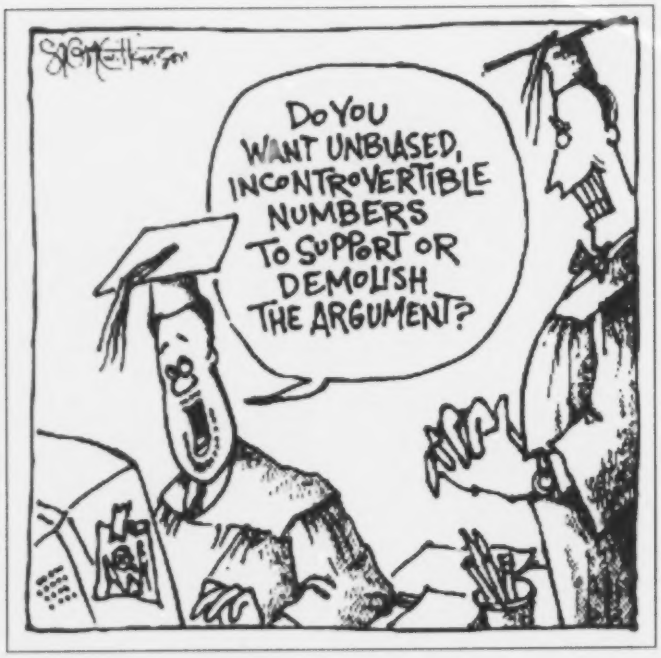

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